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(54) Title: CABLE TIDY

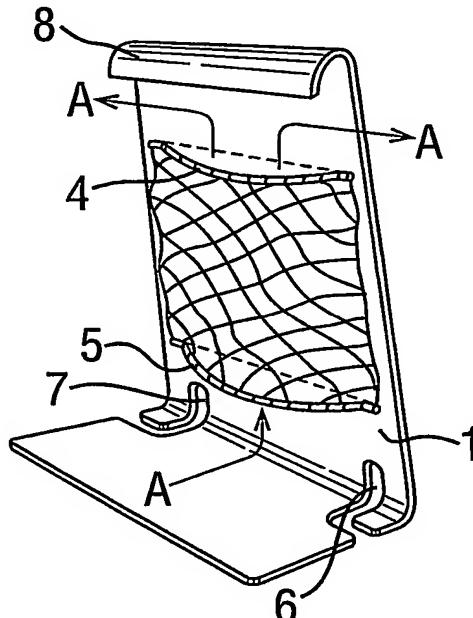
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



(57) Abstract: A cable tidy, comprising a rigid support member, carrying a cable retaining net which allows air to flow past the cable in order that heat dissipates quickly.

CABLE TIDY

The present invention relates to a housing or receptacle for loose electrical cable.

5 In a typical office or home environment because of the large number of electrical and electronic appliances such as computers, TV, Hi Fi, etc which are to be connected to the mains, usually via a multiway adapter, there typically results an unsightly and possibly dangerous tangle of cables, which is difficult to control. Accordingly, the prior art such as WO/0041276 provides an arrangement which facilitates the control of such 10 cables, and is very simple to put into effect, without requiring any specialised electrical equipment. However in prior art solutions there can be a problem that due mainly to inductive effects in the cable, in the absence of sufficient air circulation, a build up of heat may occur within the enclosure rendering the enclosure unsafe due to the possibility of insulation melting leading to short circuits and possible fire risk.

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Accordingly the present invention provides a receptacle for electrical cable comprising a substantially rigid stand member carrying a flexible cable retaining member which is so formed as to resiliently retain the cable against the stand, while allowing a flow of air past the cable. The flexible member is preferably connected to the rigid member by relatively stiff but flexible straps which allow easy access to the interior of the receptacle and to further grip whilst helping to hold the cables securely in place. 20 Preferably the cable retaining member has sufficient capacity to receive a multiway adapter as well as associated cables.

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In a preferred embodiment the rigid stand member comprises a bent sheet which is preferably of plywood or moulded plastics, but metal or other rigid material may also be suitable. The flexible member preferably comprises an elasticated net. The net is

preferably elastic enough to permit relatively bulky electrical plug appliances such as mobile phone chargers to be pushed through the apertures of the net and held securely inside it. However, any flexible material with a sufficient number of apertures to allow heat to quickly dissipate from the cable is suitable for the flexible member. The straps 5 are preferably elasticated, being expandable enough to facilitate easy removal of the net to add or remove cables and firm enough to secure the flexible member in place, although any flexible or non-flexible connecting material is suitable. In a preferred embodiment there are two exit means from the device whereby cable exits to the power supply through one exit means and to an appliance or appliances through the other exit 10 means. Preferably, the rigid member is adapted to hang from a table, desk, shelf or the like or adapted to stand vertically to save space. The rigid member may have guide slots for the cables so as to hold them in place and improve the appearance.

Some embodiments of the invention will now be described, by way of example, 15 with reference to the accompanying drawings, in which:

Figure 1 is a rear perspective view of a first embodiment of the invention in a first working orientation;

Figure 2 is a rear perspective view of the embodiment of Figure 1 in use;

20 Figure 3 is a further rear perspective view of the embodiment of Figure 1;

Figure 4 is a front perspective view of the embodiment of Figure 1;

Figure 5 is a rear perspective view of the embodiment of Figure 1 in a second working orientation in conjunction with a table;

Figure 6 is a side view of the arrangement of Figure 5;

25 Figure 7 is a similar view to that of Figure 5, but also shows the arrangement of cable in the device;

Figure 8 is a front perspective view of a second embodiment of the invention;

Figure 9 is a front perspective view of a third embodiment of the invention;

Figure 10 is a rear perspective view of a fourth embodiment of the invention in use;

Figure 11 is a perspective view of the fourth embodiment of the invention

positioned to facilitate removal of wires;

5 Figure 12 is a perspective view of the fourth embodiment of the invention illustrating removal of the flexible member;

Figure 13 is a perspective view of the fourth embodiment of the invention with the flexible member removed; and

10 Figure 14 is a perspective view of the fourth embodiment of the invention with the wires removed.

Referring to the drawings, Figure 1 shows a first embodiment of the invention in a standing orientation, which comprises a rigid stand member 1 formed from a rectangular sheet of plywood bent to form a base 2 so that it can stand upright. A resilient, flexible cable-retaining member 3 comprises an elastic net and is attached to the rigid member 1 by a pair of elastic straps 4 and 5. The ends of the straps 4 and 5 are connected by screws or the like to the rigid member thus forming openings allowing the cables to be introduced between the net and the rigid member 1 as shown in Figure 2, and indicated by arrows 'A' in Figure 3. The rigid member 1 also includes cable guides which 15 comprise slots 6 and 7 and a trough 8 which help to position and retain the cable. The base of the rigid member also has resilient strips of silicone or rubber 9 and 10 on its 20 inner surface for use in an alternative working position, as explained below.

As an alternative, straps 4 and 5 need not be resilient but can be made from cord.

25 As a further alternative, the flexible member need not be resilient but can be a string net or other net of non-resilient material.

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Figures 5, 6 and 7 show the device of Figure 1 in the alternative working position, in which it is suspended on the edge of a table and is particularly useful as it takes up no space on the floor which in an office is often already crowded. As shown in Figure 6 the suspension is facilitated by the included angle α being such that the centre of gravity of 5 the device is inboard relative to the edge of the table. In addition, the resilient strips 9 and 10 on the base 2 increase the friction between the surface of the table and the base. As shown in Figure 7 the trough 8 is particularly useful in this second working position as, when some of the cable is resting within it, it reduces the force pulling the cable out 10 of the flexible member 3.

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The device can also be used in a third working position wherein the rigid member is positioned with the base 2 and the trough 8 resting on the floor such that the flexible member 3 hangs below the rigid member 1 and the rigid member 1 can be used as a footstool. This can provide a footrest under a desk whilst hiding the cable.

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Figures 1 to 7 show the preferred form of cable management slots or guides 6 and 7 which extend inwards from the outer edges of the base 2 of the rigid member and then extend upwardly towards the flexible member 3. The benefit of this method of cable retention is that when the rigid member is being used in the "standing" position, once the 20 cables are threaded through the guide they are located by three sides of the guide and retained in position by the supporting surface. In the second working position the guides 6 and 7 retain the cable between the sides of the guide and the adjacent surface of the table, shelf or desk.

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Figure 8 shows a second embodiment of the invention having alternative guides 11 and 12 to retain the cable which comprise slots extending inwards from the outer edges of the rigid member. These slots are particularly useful when the device is in the upright

position as the cables can be introduced easily without having to slide them in a vertical direction.

Figure 9 shows a third embodiment of the invention this time with a different style of guide, in which slots 13 and 14 extend inwards from the outer edges of the rigid member and then (when the device is in an upright position) extend downwards in order to hold the cable more tightly. As will be clear from the drawing, the length of vertical extension of slots 13 and 14 can be varied depending on the degree of cable retention required. The lengths of the slots may be the same providing a more aesthetically pleasing symmetry, or may be different, allowing the user to choose the degree of cable retention. This style of guide is particularly useful if the cable tidy is used in different orientations.

Figure 10 shows a fourth embodiment wherein there is one continuous elasticated strap or surround around the flexible member. The strap is connected removably to the rigid member by studs with enlarged heads or the like, acting as hooks, thus forming openings allowing the cables to be introduced between the flexible and rigid members as illustrated in figures 10 and 11, and enabling the flexible member to be easily removed to access the cables or multi-way connectors as illustrated in figures 12-20 14.

In alternative arrangements, the flexible member and/or the strap may not be resilient but may be made from other materials as in the first embodiment. In further alternative arrangements, at least part of the flexible member or the strap is not removable, but remains attached while other parts are removed for access to the cables. In further alternative arrangements, there is more than one strap as in the first embodiment.

Claims

1. A receptacle for electrical cable comprising a substantially rigid stand member carrying a flexible cable retaining member which is so formed as to resiliently retain the cable against the stand while allowing a flow of air past the cable.
5
2. A receptacle according to claim 1, wherein the flexible member is connected to the rigid member by at least one strap.
- 10 3. A receptacle according to claim 2, wherein said at least one strap is resilient.
4. A receptacle according to claim 2, wherein said at least one strap is elasticated.
- 15 5. A receptacle according to any preceding claim, wherein said flexible member is resilient.
6. A receptacle according to claim 2, wherein the flexible member is connected to the rigid member by one strap forming a border around the periphery of the flexible member.
- 20 7. A receptacle according to claim 2 wherein at least part of said at least one strap connects the flexible member to the rigid member removably.
8. A receptacle according to claim 7 wherein said at least one strap connects the flexible member to the rigid member removably via studs with enlarged heads acting as
25 hooks.

9. A receptacle according to any preceding claim, wherein the flexible member is a perforated bag.
10. A receptacle according to any preceding claim, wherein the flexible member is a net.
11. A receptacle according to any preceding claim, wherein the flexible member is elasticated.
- 10 12. A receptacle according to claim 10 and claim 11, wherein the net is sufficiently elastic to permit an electrical plug appliance to be pushed through an aperture of the net and then retained securely inside it.
13. A receptacle according to any preceding claim in which the rigid member 15 comprises a sheet of material, one edge of which is formed into an L-shaped cross-section, so as to form a stand.
14. A receptacle according to any one of the preceding claims, wherein the rigid member includes cable guide means.
- 20 15. A receptacle according to claim 14, wherein said guide means comprises slots for locating cables.
16. A receptacle according to claim 14 or claim 15, wherein said guide means 25 includes a trough formed at the opposite edge to the edge having the L-shaped cross-section.

17. A receptacle according to claim 15, wherein the rigid member is formed from a sheet material and said each slot for locating cables extends inwards from an edge of the rigid member.
- 5 18. A receptacle according to claim 15, wherein said slots for locating cables are so shaped as to co-operate with an adjacent surface in order to retain the cables.
- 10 19. A receptacle according to claim 15, wherein said slots for locating cables are formed so as to co-operate with a table in order to retain the cables.
20. A receptacle according to any one of the preceding claims, wherein the rigid member is adapted to hang from the edge of a desk.
- 15 21. A receptacle according to any one of the preceding claims, wherein the rigid member is adapted to stand upright on a surface.
22. A receptacle according to any one of the preceding claims, wherein said rigid member has silicone or rubber strips to grip the surface of a table desk or the like.
- 20 23. A receptacle according to any one of the preceding claims which is also adapted to house a multiway connector.

FIG. 1

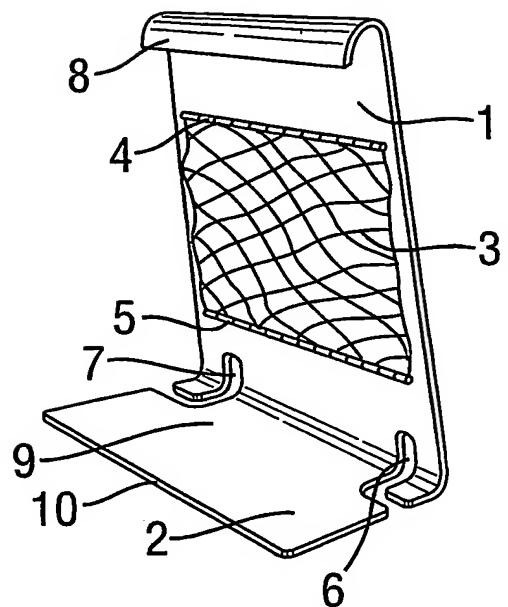


FIG. 2

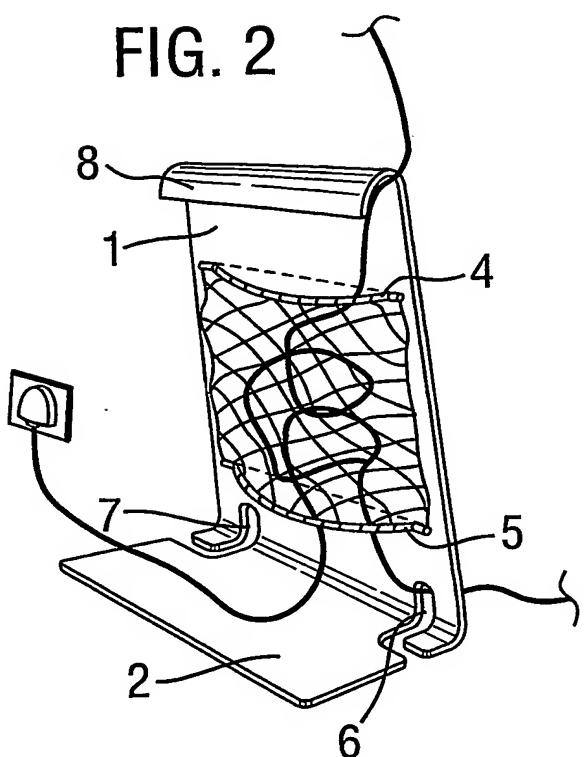


FIG. 3

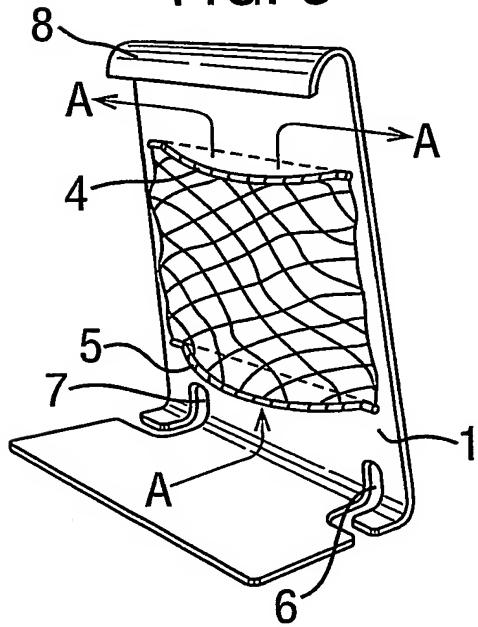
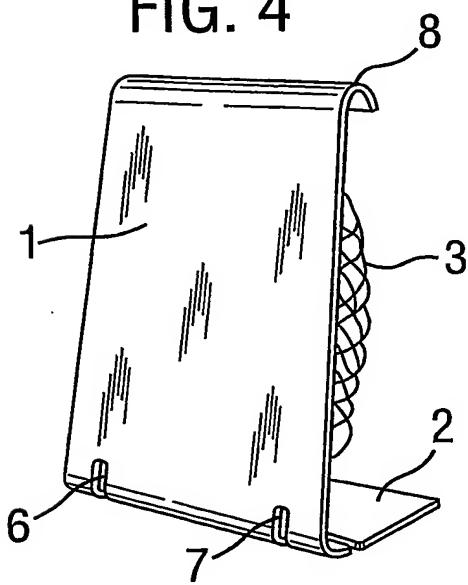


FIG. 4



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FIG. 5

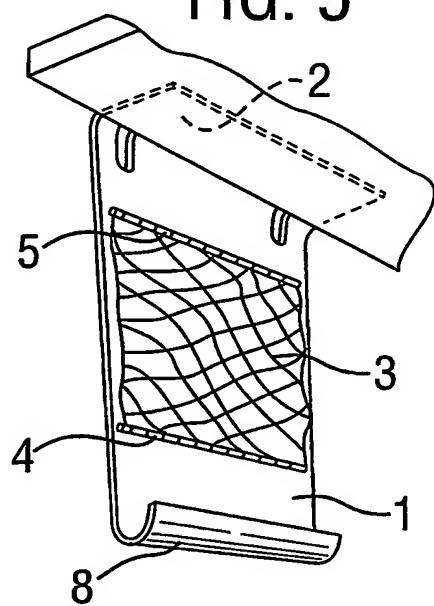


FIG. 6

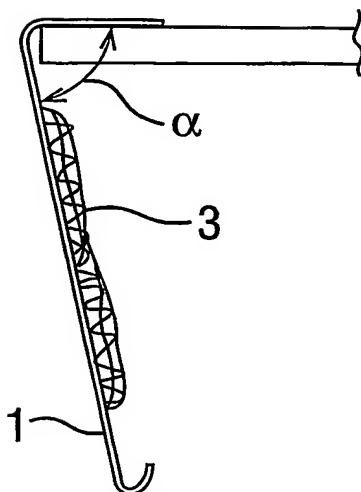


FIG. 7

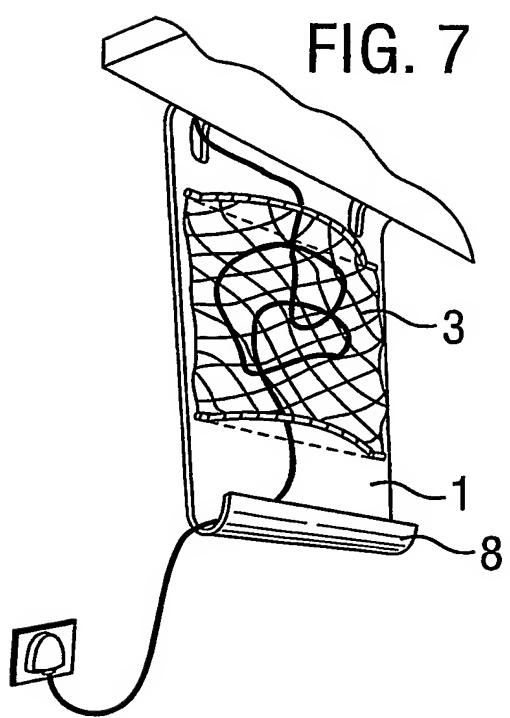


FIG. 8

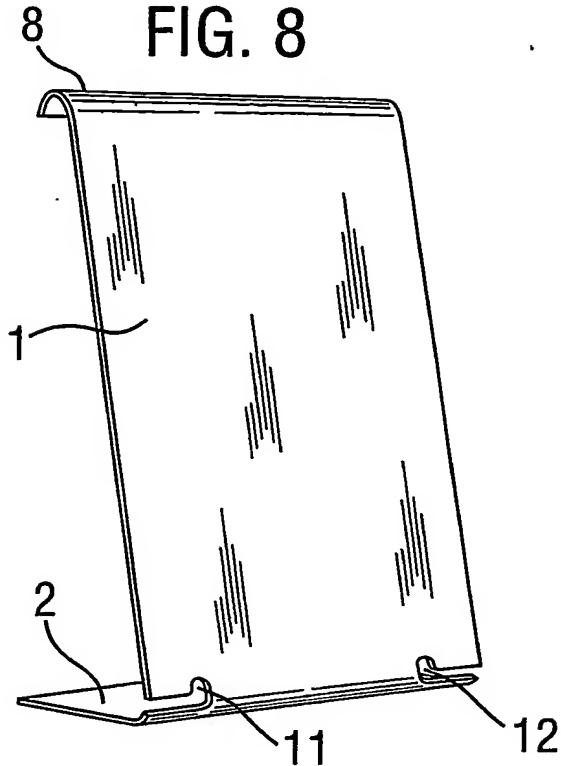
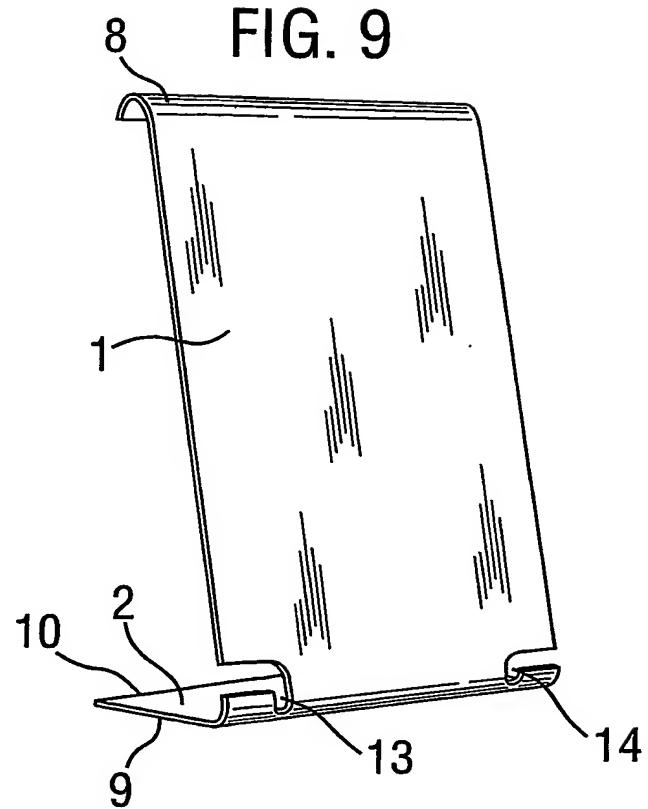


FIG. 9



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FIG. 10

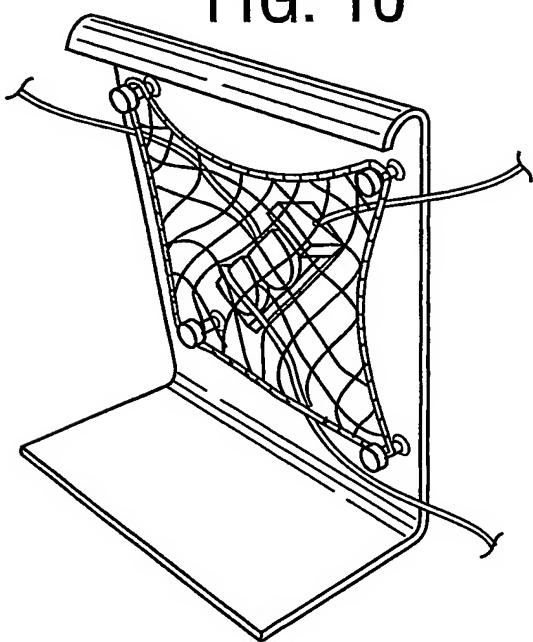


FIG. 11

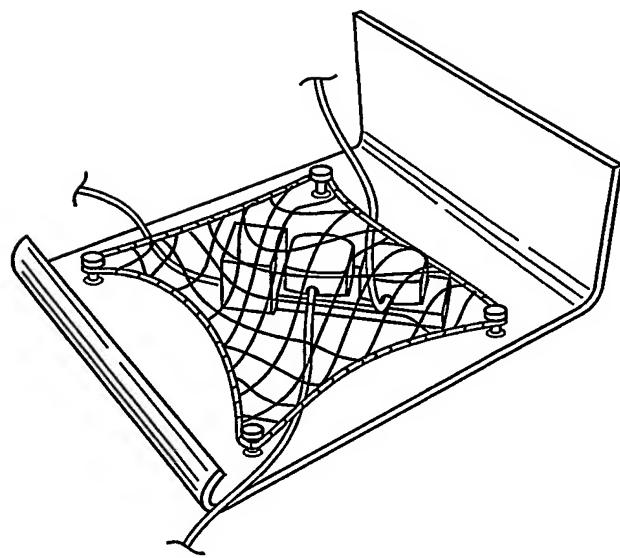
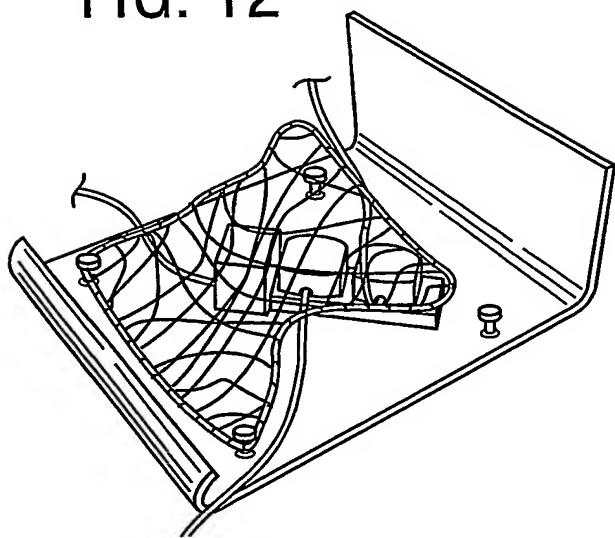


FIG. 12



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FIG. 13

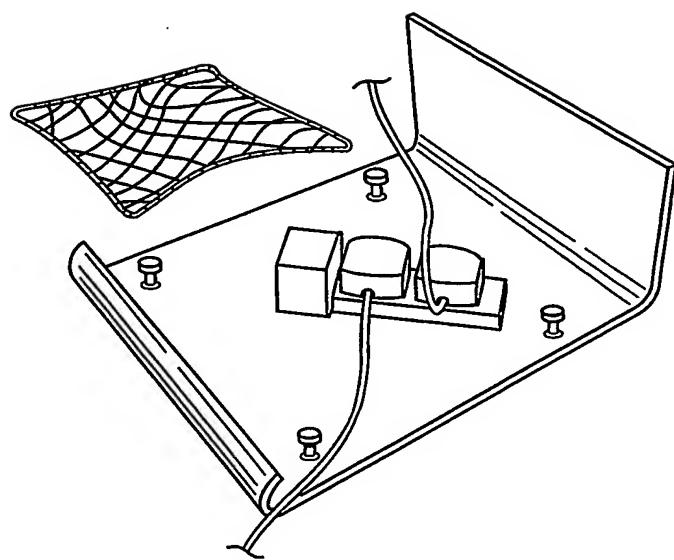
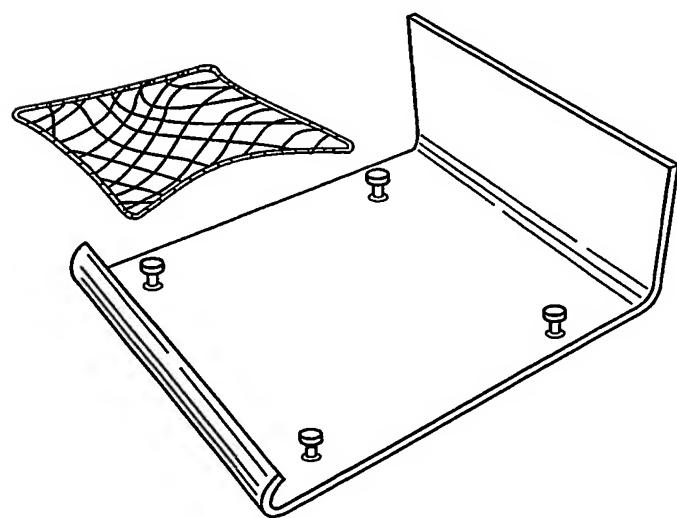


FIG. 14



INTERNATIONAL SEARCH REPORT

PCT/GB2004/000883

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H02G3/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H02G A47B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 298 02 779 U (DAUPHIN ENTWICKLUNGS- U. BETEILIGUNGS GMBH) 9 April 1998 (1998-04-09) page 4, line 9 -page 8, line 27; figures 1-7	1-12, 14, 15, 19, 23
A	US 5 809 900 A (ALEXANDER AT AL.) 22 September 1998 (1998-09-22) abstract; figure 1	1, 9, 21
A	GB 2 378 325 A (ACKERMANN LIMITED) 5 February 2003 (2003-02-05) the whole document	1, 9, 10

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search

11 June 2004

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18/06/2004

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INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/GB2004/000883

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
DE 29802779	U	09-04-1998	DE 29802779 U1	09-04-1998
US 5809900	A	22-09-1998	NONE	
GB 2378325	A	05-02-2003	NONE	